



Year of the Air Force  
Family

# Air Force Materiel Command



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Family

## Development Planning (DP)

Lt Col Brad Harroff  
HQ AFMC/A5CC  
20 Apr 2010

**Integrity ◊ Service ◊ Excellence**

# Overview

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- **Revitalizing Development Planning (DP)**
- **Description & Purpose of DP**
  - SUPPORT THE WARFIGHTER!
- **DP governance process**
- **Status**
- **Way Ahead**
- **Summary**



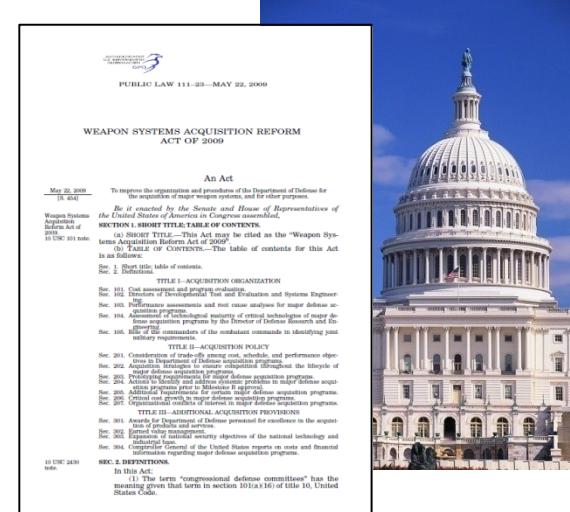
# Why revitalize DP/Sys Eng?

Weapon Systems Acquisition Reform Act of 2009  
Synopsis: “review the organizations & capabilities of the military departments with respect to...  
**development planning**...and identify needed changes or improvements” to ensure the military dept has provided appropriate resources for: **Development planning and systems engineering organizations with adequate numbers of trained personnel**”  
A 2007-2008 GAO

Acquisition Study found that:

- Only 134 of 268 critical technologies were accepted into a product's design based on more than lab demo of basic performance, tech feasibility & functionality
- Programs that held sysEng events prior to beginning “development” experienced 20% less cost growth & 8-9 months less in IOC delays

**US Gov't leadership directed DP revitalization**





# Why revitalize DP/Sys Eng?

In 2008, SECDEF Robert Gates declared:

“...this department must ...stop programs that significantly exceed their budget or which spend limited tax dollars to buy more capability than the nation needs...we must ensure that requirements are reasonable and technology is adequately mature to allow the department to successfully execute the programs...”

Dec 08: New DoDI 5000.02 Acq Regulation mandating:



(a.) New Acquisition milestone:  
Materiel Development Decision  
(MDD)



(b.) New policy: Competitive Prototyping in  
Technology Development Acquisition Phase



(c.) New policy: Conduct Preliminary Design Review  
(PDR) prior to Milestone B



***DP ensures requirements are reasonable & technology is mature and is essential to plan, budget & execute IAW the new acquisition regulation***



# Why revitalize DP/Sys Eng?

## CSAF's/SECAF's Acquisition Improvement Plan (AIP) Initiative #2

### Problem Statement

- “Overstated and unstable requirements that are difficult to evaluate during source selections”
- “Ensure acquisition involvement and leadership in support of the lead command early in the development of program requirements”  
*SECAF Acquisition Improvement Plan, 4 May 09*  
**...resulted from...**

### **Events - circa 1989-1993 - and their unintended consequences**

- Acquisition Workforce reduction
  - Early Systems Engineering and Development Planning functions virtually eliminated
  - As a consequence, there was erosion of acquisition expertise and processes that supported the lead command early in the development of program requirements
- Significant reduction of specifications and standards - thru 1998
  - Acquisition expertise in translating operational requirements into system requirements eroded

**AIP #2 Improving the Requirements Generation Process, is built around "Development Planning"**



### Air Force 2008-2010 Strategic Plan

- *Reinvigorate AF Nuclear Enterprise*
- *Win Today's Fight*
- *Develop & Care for Airmen & Families*
- *Modernizing Aging Air & Space Inventories*
- ***Recapture Acquisition Excellence***



#### Acquisition Improvement Plan (AIP) - 5 Initiatives

- #1- Revitalize the Air Force acquisition workforce
- **#2- Improve requirements generation process**
- #3- Instill budget and financial discipline
- #4- Improve AF major system source selections
- #5- Establish clear lines of authority/accountability within acquisition organizations

#### **2.1- Ensure early acq/leadership involvement in reqts development**

- Translating Operational Requirements to System Requirements
- Support to High Performance Teams
- Requirements/Acquisition Strategy Panel (R/ASP)

#### **Development Planning**

- 2.2-Senior Leadership Certification of Requirements
- 2.3- MAJCOM Coordination on System Requirements Documents (SRDs)
- 2.4- Minimize Key Performance Parameters
- 2.5- Require Incremental Acquisition Strategies

**Institutionalize each action with policy, AFI guidance and training**

*Headquarters United States Air Force*

#### Acquisition Improvement Plan

*Prepared by the Office of the Assistant Secretary of the Air Force  
(Acquisition)*

*4 May 2009*



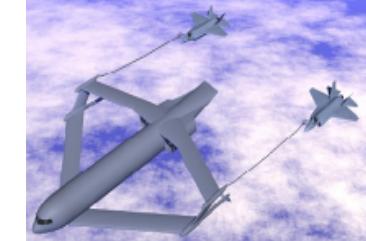
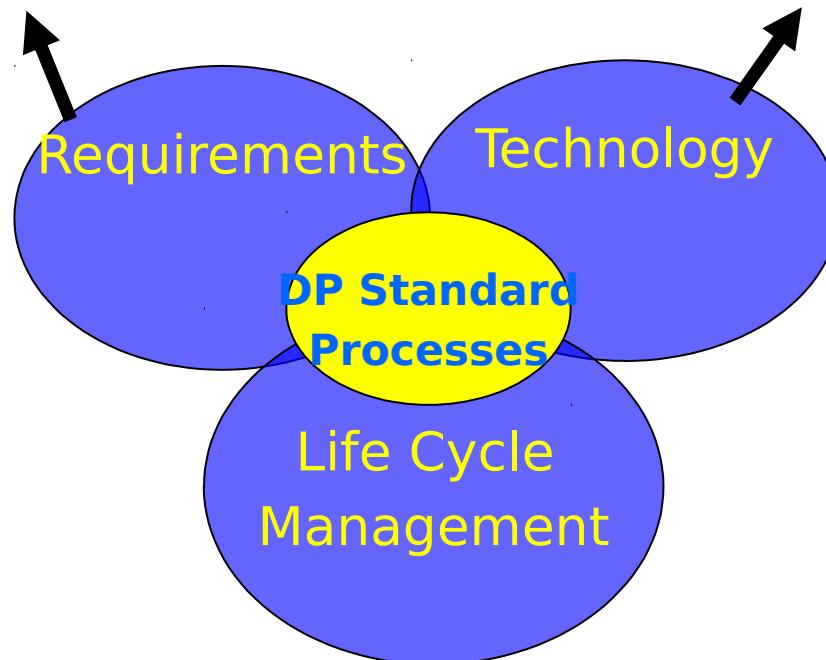
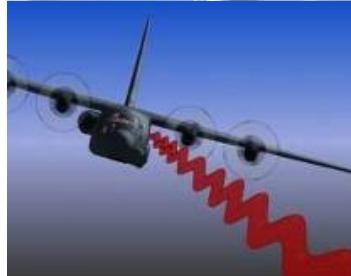
*Integrity – Service – Excellence*

# Definition of DP

**“DP is a collaborative process bridging warfighter-identified capability needs to planning for acquisition materiel solutions”**

- DRAFT AFMCI 10-605, “Development Planning”

- Bridge warfighter capability needs
- Evaluate system-of-systems concepts
- Incorporate life-cycle planning
- Understand technology gaps
- Identify/assess risks
- Launch high confidence programs





# Purpose of DP

**DP helps user:**



**Define Materiel  
Solution  
Courses Of  
Action**



**Produce  
attainable,  
affordable,  
evaluatable  
requirements**

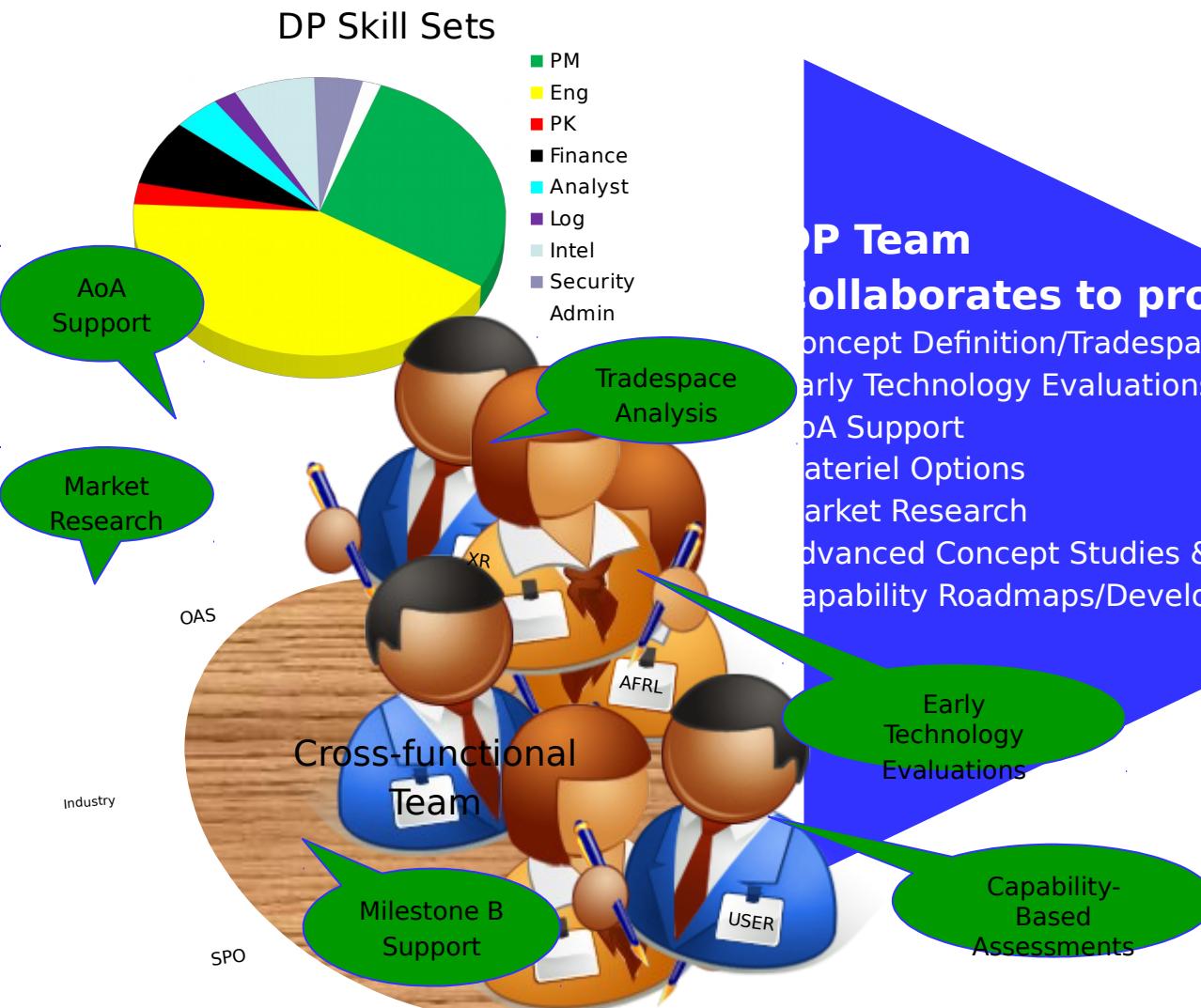


**Craft  
accurate,  
high-fidelity  
POM inputs**

***DP helps launch high-confidence programs***



# DP Team Provides Solution Options



**DP Team**  
collaborates to provide:

- Concept Definition/Tradespace Analysis
- Early Technology Evaluations
- AoA Support
- Materiel Options
- Market Research
- Advanced Concept Studies & Analysis
- Capability Roadmaps/Development Plans



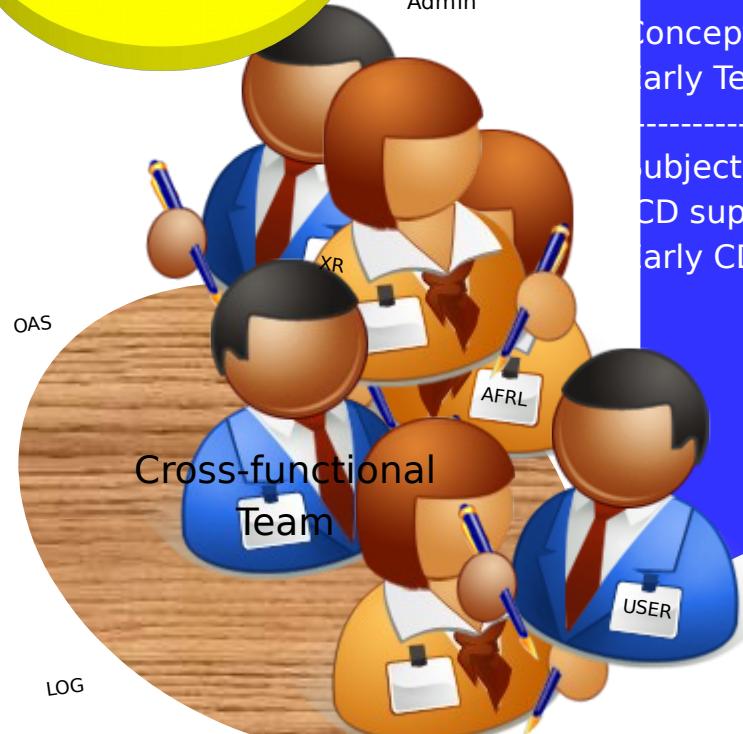
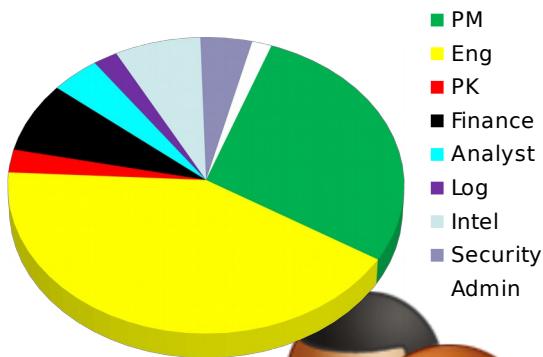
...to define the  
solution trade  
space

**DP defines materiel solution courses of action**



# DP Informs Requirements Generation

DP Skill Sets



**DP Team**  
Collaborates to provide:

- Concept definition & Tradespace analysis
- Early Technology Evaluations
- Subject Matter Experts (SMEs) for CBA
- CDD support & analysis
- Early CDD support

**Requirements**  
that are:  
Measurable  
Testable  
Attainable  
Evaluable  
Executable

AFROC Validation &  
AFMC, SAF/AQ, &  
AFOTEC Certification



*produces feasible, affordable, evaluable requirements*

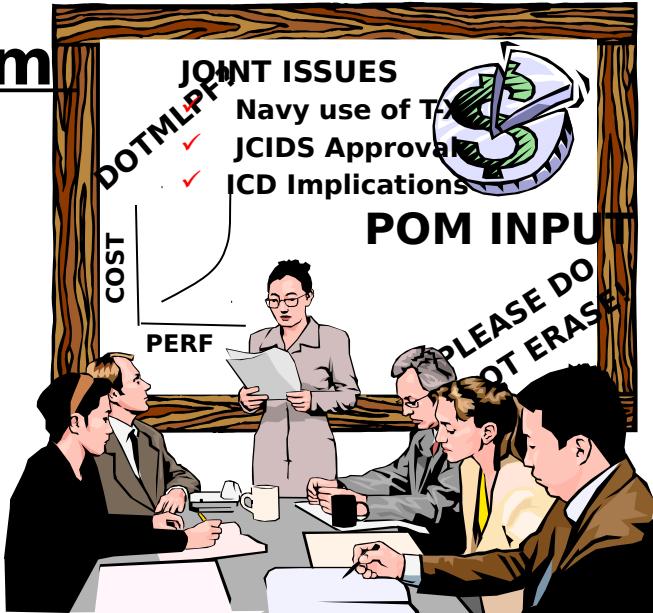


# DP Assists User with POM Estimates

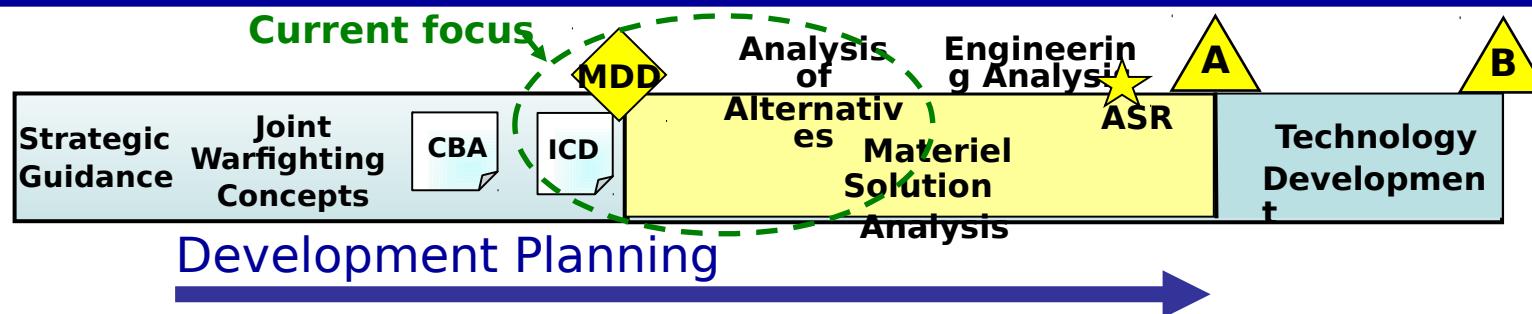
## Ongoing DP Effort:

### T-X) Advanced Pilot Training System

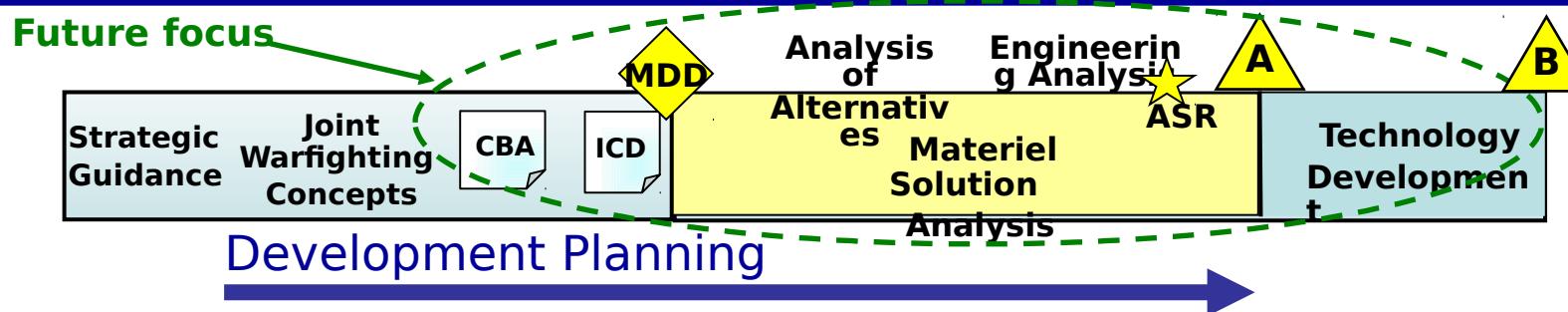
- DP Team participated in AETC's Capabilities Based Assessment (CBA)
  - Early acquisition involvement
  - Re-focused T-X requirements from "aircraft" to "training system" concept
- Significantly improved AETC budget inputs
  - AETC's initial cost estimates did not reflect requirement for two contractors through Technology Development Phase
    - DP team ensured proper cost estimates



***DP crafts accurate, high-fidelity POM estimates***



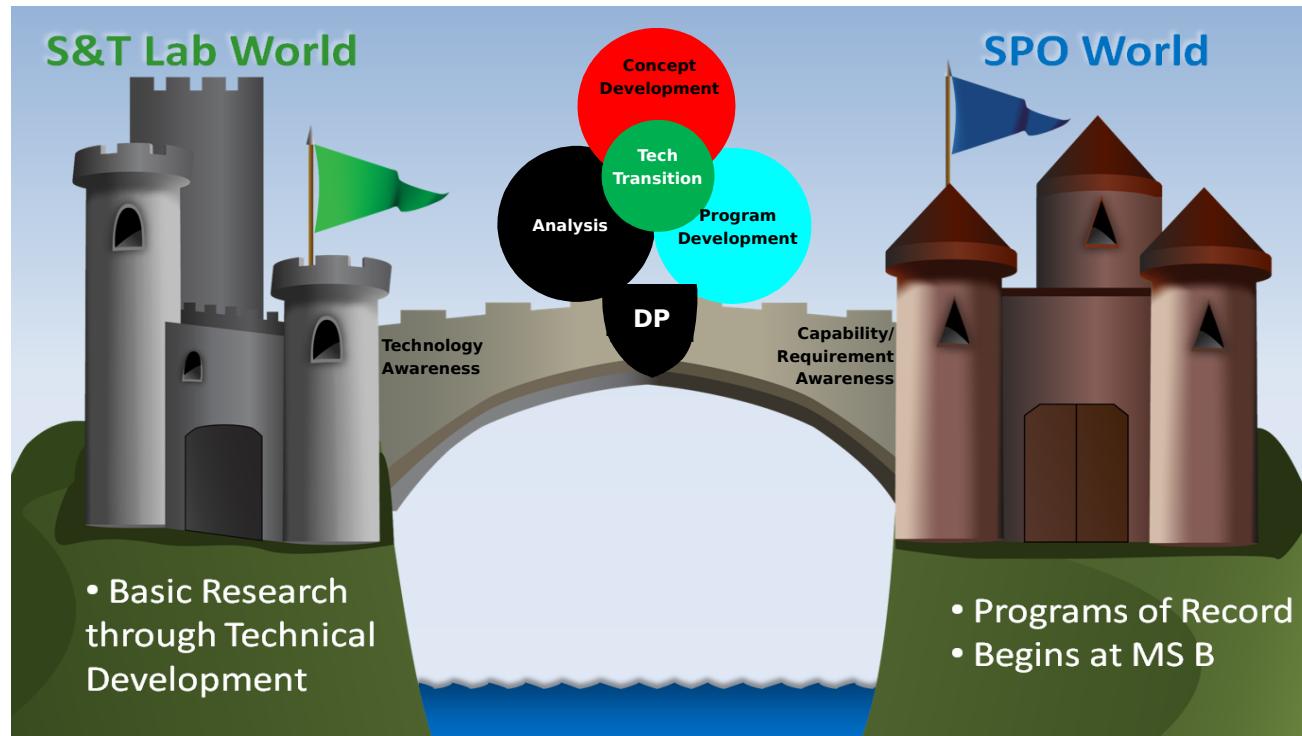
- Current DP efforts focused on specific User identified needs
- Need to consider a more proactive, mission focused approach that:
  - Links CBA/P and development planning actions
  - Leverages and informs technology planning and investments
  - Provides consistent mission-based system-of-systems assessments
- Requires:
  - DoD and AF level policy that directs early, proactive DP
  - Consistent AF level framework for assessing needs and identifying solutions
    - Ownership of Integrated Capabilities
    - Consistent management framework – from needs assessments to fielded capabilities
    - Funding for consistent analytic framework – strat planning thru fielded capabilities
    - Consistent resources and processes supporting pre-ICD trades and strategies
    - Skilled, experienced people



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# DP and S&T Linkage



Reaches back into AFRL to identify necessary technology maturation



## Development Planning

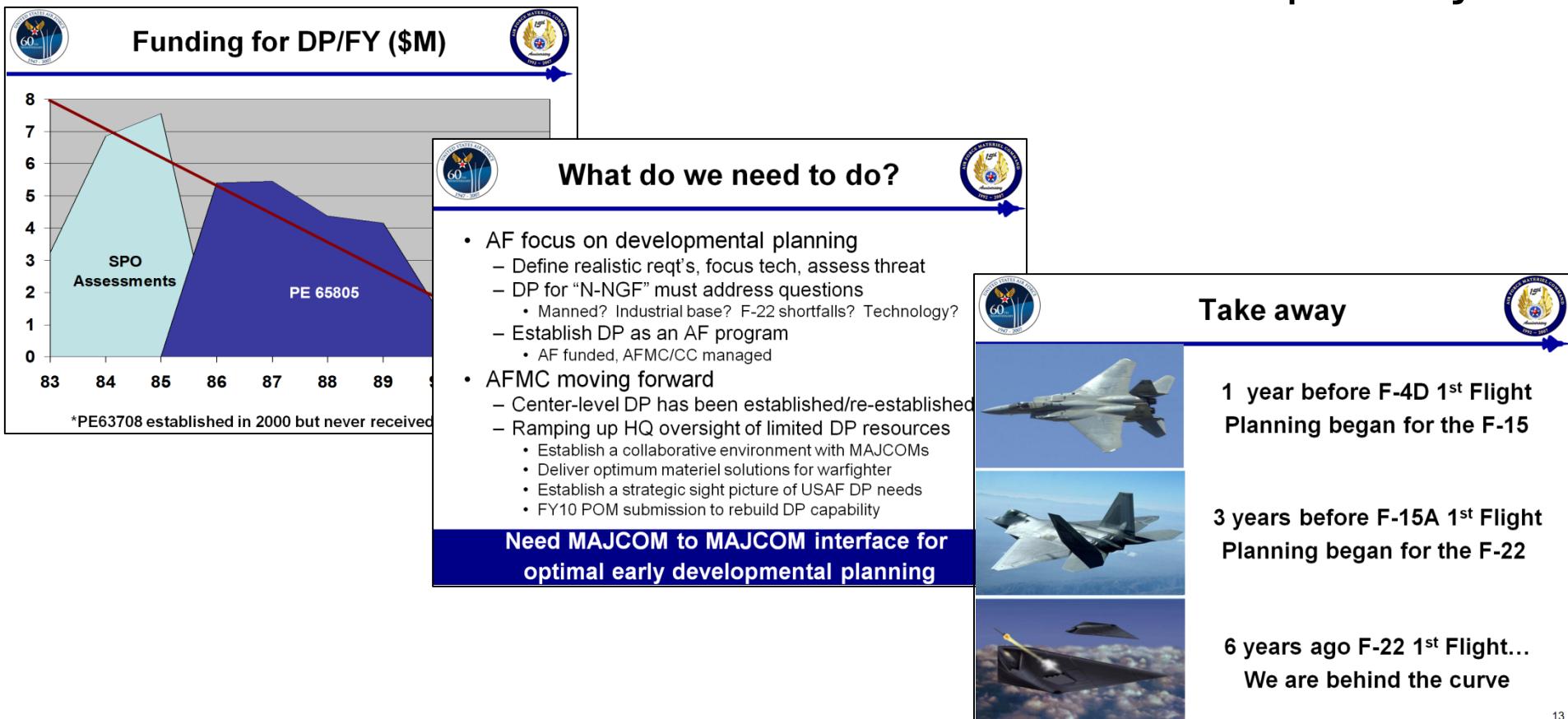
Looks ahead into the SPOs to let them know what's on the horizon





# Requirements Analysis & Maturation (RAM) Program Element (PE)

In 2008, AFMC/CC saw the need for revitalized DP and advocated the re-establishment of a robust capability



Establishment of RAM PE and an AF-wide DP Governance Process



# DP Governance Process



- DP Governance Structure established
  - 26 Jan 10 – DP Charter & FY10 Strategic Plan co-signed by AFMC/CV and AFSPC/CV
- Orchestrates DP - Supports the Warfighter!
  - Direct & monitor execution of RAM PE
  - Prioritization of AF DP workload

DP efforts are prioritized via a disciplined process:

1. Assess efforts value to the Air Force (based on Users' inputs)
2. Generate draft, resource constrained prioritized list of DP efforts
3. Apply professional military judgment to produce a final list





# DP Governance Structure

*AF Senior Leaders direct DP workload execution*

DP Council  
(Strategic)



## Co-Chair

AFMC/CV,  
AFSPC/CV

## Membership

SAF/AQ (Deputy), SAF/US (Deputy),  
MAJCOM/CVs/CAs, AF/A2, AF/TE, AFOTEC/CC,  
AF/A3/5, AF/A4/7, AF/A8, AF/A9, and AF/A10

## Frequency

Annually  
(First: 27 Oct 09)  
(Next: Jun 10)

DP Board  
(Operational)



## Co-Chair

AFMC/A2/5,  
AFSPC/A5

## Membership

MAJCOM A2/3/4/5/6/7/8/9, and staff functionals  
as deemed appropriate by each MAJCOM, HQ  
AFMC/EN, Materiel Centers, AFRL, AF/A2R,  
AF/TE, AFOTEC, AF/A4L, AF/A5R, AF/A5X,  
AF/A8X, AF/A9R, AF/A10, SAF/AQR, SAF/AQX,  
and SAF/USA

## Frequency

Semi Annually  
(Sep 08 & Jun 09)  
(Next: 24 May 10)

DP Working  
Group  
(Tactical)



## Co-Chair

AFMC/A5C,  
AFSPC/A5X

## Membership

MAJCOM A2/3/4/5/6/7/8/9 as deemed  
appropriate by each MAJCOM, HQ AFMC/EN,  
HQ AFMC/FM, Materiel Centers, AFRL,  
AFISRA/A5R, AF/A2DP, AF/A5RP, AF/A5XC,  
AF/A4LM, AF/A8XC, AF/A9, AF/TE, AFOTEC,  
SAF/USAP, SAF/AQRE, SAF/AQXR, and  
SAF/AQRT

## Frequency

Quarterly  
(Next: 28-29 Apr  
10)





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# The Results: FY10 DP Efforts

	Effort Name	Center	User	Effort Name	Center	User	
1	NORAD & US NORTHCOM Surveillance	ESC	NORAD	17	Satellite Operations Enterprise	SMC	AFSPC
2	Interoperable Multifunction Advanced Data Link	ESC	ACC	18	CAF DE Roadmap	AAC	ACC
3	Ext/Int CONUS Air Wide Area Surveillance	ESC	AF/A5XC	19	Selectable Effects Weapon	AAC	ACC
4	Irregular Warfare/Improvised Explosive Device Capabilities Plan	ESC	AF/A5RQ	20	Battle Space Awareness/Technical Intel	SMC	AFSPC
5	MQ-X Unmanned Aerial System	ASC	ACC	21	Missile Warn/Missile Defense Commercially Hosted Infrared Payload	SMC	AFSPC
6	Project IX (SOF mobility platform)	ASC	AFSOC	22	OA-X Light Attack Aircraft	ASC	ACC
7	Joint Future Theater Lift (Part II)	ASC	AMC	23	Conventional Strike Missile	SMC	AFSPC
8	Control and Reporting C2 (CRC C2) Radar Replacement	ESC	ACC	24	NexGen Tactical Laser Weapon	AAC	ACC
9	CRC C2 Engine AoA Support (pre MDD)	ESC	ACC	25	Non-Kinetic Counter Electronics	AAC	ACC
10	T-X Advanced Pilot Training System	ASC	AETC	26	Space Environmental Monitoring	SMC	AFSPC
11	Next Generation Air Dominance	ASC	ACC	27	Spacelift DP	SMC	AFSPC
12	Airborne Electronic Attack System of Systems	ASC	ACC	28	Boosted Penetrator	AAC	ACC
13	Common Vertical Lift Support	ASC	AFGSC	29	Missile Warn/Missile Defense Joint Overhead Persistent Infrared Ground Study	SMC	AFSPC
14	Enterprise Infrastructure Program	ESC	AFSPC	30	Launch Range DP	SMC	AFSPC
15	Light Mobility Aircraft (LiMA)	ASC	AMC	31	Presidential Aircraft Recapitalization	ASC	AMC
16	Space Cell Capability Development	ASC	ACC				



# Ongoing DP Effort Examples

Effort	Ctr	DP Team Good News Story	Products Supported					
			Tech Readiness Assessment	Trade-space Analysis	Concept Characterization	Prelim POM estimate	ICD, MDD, CDD	AoA prep
Advanced Pilot Training System (T-X) USER: AETC	ASC	<ul style="list-style-type: none"><li>Significantly strengthened User's POM estimate</li><li>Prepared User for joint issues – achieved a "paper" JROC</li></ul>	YES	YES	YES	YES	YES	YES
Common Vertical Lift Spt Prgm (CVLSP) USER: AFGSC	ASC	<ul style="list-style-type: none"><li>Showed User cost challenges of single aircraft CONOPS</li><li>Helped formulate better rqmts for CDD &amp; SRD</li></ul>	YES	YES	YES	YES	YES	YES
Light Mobility Aircraft (LiMA) USER: AMC	ASC	<ul style="list-style-type: none"><li>Prepped User for MDD and program briefings to CSAF</li><li>Helped User avoid rqmts that would drive solution away from COTS/GOTS aircraft</li></ul>	YES	YES	YES	YES	YES	YES
Ground Moving Target Indicator (GMTI) USER: ACC	ESC	<ul style="list-style-type: none"><li>Tackled HAF/A2 &amp; SAF/AQI quick-turn study (90 days)</li><li>Providing acquisition support to upcoming large-scale AoA</li></ul>	YES	YES	YES	YES	N/A	YES



# Ground Moving Target Indicator (GMTI) DP Trade Study

## Background

- SAF/AQI and HAF/A2 directed 90 day study
- GMTI DP team led by ESC/XR: AFISRA, AFMC/A2, AFMC/IS, ASC/XR, 303 AESW, 851 ELSG, AFRL, MIT/LL, and OO-ALC
- 60 inputs from industry, AF, DoD & NRO labs
- Analyzed cost-benefit of and prioritized GMTI tech solutions

## Issues

- GMTI DP Team identified critical Planning, Collection, Processing, Analysis, & Dissemination (PCPAD) capability gaps
- Produced 30+ Potential Materiel Solution quad charts with supporting data to support FY12 POM submission
- Trade study results briefed to GMTI Summit on 5 Mar 10

## Bottom Line

- Demonstrates use of DP process to support assessment of high priority Warfighter ISR need for use in FY12 POM build
- Provided “jump-start” for analytic effort supporting JSTARS AoA

# Way Ahead for DP

- **FY10 DP Execution is underway**
- **FY11 Prioritization is in progress, vetting to occur thru DP Governance**
  - Working Group - 27-28 Apr
  - Board - 24 May
  - Council - 28 June
- **FY12 POM deliberations continue**
  - DP needs your support!

# Summary

- **DP Exists to support the Warfighter**
- **DP workload gets prioritized by the User at the highest levels**
- **We're executing FY10, prioritizing FY11, & advocating FY12 resources**



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# All leading to...



**ENHANCED COMBAT  
CAPABILITY FOR THE  
WARFIGHTER**



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